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§ 75. Variations.—I saw in the Bulletin a notice of an Iris which changed its color. I have in my little garden a root of *I. Germanica*, a *fleur-de-lis* of the white variety. There are no blue ones in the neighborhood that I know. Four years ago one of the outer divisions of the perianth of one flower was dark blue. The next year one whole flower was dark blue, two other flowers on the same stalk were white. In the following year all the flowers on one stalk were blue, and all the flowers on the other stalks white. This year it bore only white flowers.

I am led to question the permanence of single variations (but not the permanence of the *forms* of variation) from having been unable to procure the same variety for two seasons in succession in the same place. For instance, our common Sensitive Fern varies into var. *obtusilobata*, but the variation is not permanent. I often find it, and once found a large bed of it, in every possible intermediate form. The next year going to look for some Adder-tongue ferns growing near, I looked carefully for the *obtusilobata*, but not one appeared. Some remarkable variations of *Aspidium acrostichoides* I have found the second year perfect forms of our finest evergreen fern. The Adder-tongue fern too varies very much. On the high cold sand plains of North Elba it is two or three inches high and perfectly orbicular. In Elizabethtown, Essex County, I found it ten inches high, ovate and very fine. Here it is quite plenty in swamps and pastures, but is so slender and acute as to be difficult of detection among the grass.

L. A. M.

§ 76. Apocynum.—I have been much interested in your notes on Apocynum. It grows abundantly about us and I have made it a point to observe it. I have repeatedly found insects caught by the flowers, mostly small coleoptera; they were all dead when I observed them. The flowers are visited by the common rose beetle among other insects. This beetle is very destructive to many of our wild flowers this year—the *Azalea viscosa*, *Ceanothus Americana*, and *Pogonia ophioglossoides* being all subject to its ravages. In reading Darwin's "Loves of the Flowers" I find the following, which may be of interest in the above connection. "In the Apocynum androsæmifolium the anthers converge over the nectaries, which consist of five glandular oval corpuscles surrounding the germ, and at the same time admit air to the nectaries at the interstices between each anther. But when a fly inserts its proboscis between these anthers to plunder the honey, they converge closer, and with such violence as to detain the fly, which thus generally perishes. This account was related to me by R. W. Darwin, Esq., of Elston, in Nottinghamshire, who showed me the plant in flower, July 2d, 1788, with a fly thus held fast by the end of its proboscis, as was well seen by a magnifying lens, and which in vain repeatedly struggled to disengage itself, till the converging anthers were separated by means of a pin; on some days he had observed that almost every flower of this elegant plant had a fly in it thus entangled; and a few weeks afterwards favored me with his further observations on this subject.

"My Apocynum is not yet out of flower. I have often visited it

"and have frequently found four or five flies, some alive, and some dead, in its flowers; they are generally caught by the trunk or proboscis, sometimes by the trunk and a leg; there is one at present only caught by a leg; I don't know that this plant sleeps, as the flowers remain open in the night; yet the flies frequently make their escape. In a plant of Mr. Ordoyno's, an ingenious gardener at Newark who is possessed of a great collection of plants, I saw many flowers of an *Apocynum* with three dead flies in each; they are a thin bodied fly, and rather less than the common house-fly; but I have seen two or three other sorts of flies thus arrested by the plant, August 12, 1788".

W. W. BAILEY.

PROVIDENCE, R. I.

§ 77. *Sandwich Island Mosses*.—Collected by H. MANN and W. T. BRIGHAM. Named by W. S. SULLIVANT, (May, 1872.)

1. *Dicranella exilis*, (*n. sp.*)—Caule 2-3 lineari, foliis erecto-patentibus rigidis ex ovato longe sensim anguste acuminatis, cellulis oblongis uniformibus lævibus, costa lata ad apicem et ultra continua, capsula erecta oblongo-elliptica, operculo æquilongo obliquo, anaulo speciosa, pedicello 3-lineari, peristomio dicranoideo, calyptra generis.—Kuala Mountains, Oahu.

2. *Dicranum præmorsum* (*n. sp.*)—Robustum elatum tomentoso-contextum; foliis erecto patentibus longe lineali-lanceolatis convolutis apice extremo lobato-truncatis ibidemque grossius serratis, cellulis angustis interruptis, illis alaribus subquadratis brunneis, costa tenui subindistincta dorso superne lenissime serrata, perichætalibus alte vaginantibus filiformi-acuminatis, capsula elongato-cylindracea erecta stricta leniterve curvula, operculo subulato-rostrato, peristomio et calyptra generis.—Mountains of West Maui.

3. *Trematodon longicollis*, *Rich.*—Waiulua Mountains, Oahu.

4. *Campylopus flexuosus*, var:—valleys of West Maui.

5. *Campylopus exasperatus*, *Brid.*—Highlands of Hawaii.

6. *Ceratodon purpureus*, *Brid.*—Hualului, Hawaii, 6,000 ft. alt.

7. *Leucobryum gracile* (*n. sp.*)—A *Leucobryo minore* simillimo distinctum foliis paulo minoribus, pedicellis gracilioribus longioribus, capsulis brevioribus magis cernuis distinctius strumosis, etc.—Woods, Oahu.

8. *Leucobryum falcatum*, *C. Müll.*—Oahu.

9. *Encalypta ciliata*, *Hedw.*—Hualului, Hawaii, 6,000 ft. alt.

10. *Racomitrium lanuginosum*, var.—Mauna Loa, Hawaii 5,000-1,300 ft. alt.

11. *Macromitrium Reinwardtii*, *Schwgr.*—Woods, Oahu.

12. *Macromitrium piliferum*, *Schwgr.*—On rocks, Oahu.

13. *Funaria hygrometrica*, *Hedw.*—Hualului, Hawaii, 6,000 ft. alt.

14. *Bartramia rigida*, var.—Woods, Hilo, Hawaii.

15. *Bartramia Marchica*, var.—Caulibus ramulisque minus gracilibus, foliis oblongioribus citius acutatis, costa vix excurrente, pedicello brevioribus, etc.

16. *Bryum argenteum*, *Linn.*—Hualului, Hawaii, 6,000 ft. alt.

17. *Mnium giganteum*, *Schwgr.*—Oahu!

18. *Rhizogonium spiniforme*, *Bruch.*—Woods, Hilo, Hawaii.

19. *Rhizogonium spiniforme*, var. foliis brevioribus, etc.